

Agency IT Strategic Plan

Secretariat: Education

Agency Code: 208

Agency: Virginia Polytechnic Institute & State University

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Agency Profile & Strategic Direction

Agency Mission Statement:

Virginia Polytechnic Institute and State University is a public land-grant university serving the Commonwealth of Virginia, the nation, and the world community. The discovery and dissemination of new knowledge are central to its mission. Through its focus on teaching and learning, research, and outreach, the university creates, conveys, and applies knowledge to expand personal growth and opportunity, advance social and community development, foster economic competitiveness, and improve the quality of life.

Agency IT Vision Statement:

Virginia Tech has a goal of being ranked among the top 30 research universities by 2010. The Information Technology (IT) organization is playing a key role as an integrated participant in the university's research goal with focus on enhancing teaching and learning, conducting research and development, and fostering outreach for Virginia's communities.

Security across the total range of information technology related activities is essential and continues to receive enormous attention. Research and development activities associated with security of network operations, applications, biometrics, and optical networks are critical to the university's growth.

Research in, and development of High Performance Computing (HPC) to drive research and advance computational intensive studies is essential for Virginia Tech. IT personnel and faculty are jointly, in cooperation with corporate businesses, creating HPC clusters which not only promote significant computing power for research but allow for the development of operating systems which are more fault tolerant.

The IT organization is moving toward incorporating leading edge optical fiber networks which transmit greater amounts of data over dedicated light waves. Integrating the hardware and developing software to create the advanced optical networks are major endeavors of the university's IT organization. Ultimately, the integration of advanced optical fiber networks is also important in achieving Virginia Tech's goal of elevating itself to higher levels within the research arena.

The IT workforce is transforming to be even more viable and integrated into the university's academic and research fields. Over the next 5 years graduate assistants will play increasingly greater roles in IT research, with the development and testing of systems, plus they will have the opportunity to participate in operational activities.

The IT organization participates in Virginia Tech's outreach activities in several ways. An essential element of the university's community improvement activities are the development of benchmark network designs and analyses of regional technology options to promote economic growth for Virginia regions. The e-Corridors and Wellness Village programs are looking at concepts which will have positive impacts on regional economies.

Enhancing network and technology based instruction and education continue to be a high priority for the IT organization. A significant growth field is assistive technologies which are being studied, evaluated and integrated into workstations and systems which will not only serve individuals with disabilities but will also have a broader applicability to all users. Equally important are enhancements to the enterprise systems with new tools, improved access to data, greater storage capabilities, etc. The IT organization must press technology's limits and explore uncharted paths to remain competitive in a dynamic environment.

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Total Employees: 6,238

Total IT Employees: 400

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Project Selection Criteria:

Virginia Tech is decentralized, allowing colleges and departments a great amount of autonomy in the direction they take to support the university mission. IT projects planned and developed must support the university mission. A research institution will often evaluate speculative technologies and processes which are essential to developing alternative and revolutionary solutions to critical problems.

Depending on the project a development team will be made up of individuals from the functional area, personnel from the information technology organization, and faculty members. The specifics of the project and the nature of the activity will dictate the size and diversity of the project development team. Major proposals which require significant resources are reviewed by University executives.

Business Case Development:

Higher education must integrate and evaluate its information technology needs to promote academics, research, and business functions. Teaming the right mix of faculty, functional personnel and technical personnel during the development and implementation phases of IT projects is critical to ensuring success.

The development team has the expertise to understand the research requirement issues and has an in-depth knowledge of the business needs and processes. The detailed knowledge the team brings enables them to consider constraints, evaluate alternative solutions and propose the implementation of the best choice to accomplish the requirement. Decision-makers are advised during the development of the project and throughout its evolution allowing them to make timely decisions.

Risk Assessment Methodologies:

A research university must consider, plan for, and accept a certain amount of risk associated with speculative research projects. Other agencies may not need to accept this higher level of risk due to their mission. However, minimizing needless risk exposure is a continuous effort from the development of a project through the implementation and into the operational phase. Assigning personnel to projects who understand the environment, potential solutions, and are capable of incorporating precautions to reduce risk is critical. For complex projects developing methods for enhancing communications between project members is essential. The use of a method for identifying points of dependency between elements of the project is invaluable in promoting the smooth progress of a project. The incorporation of risk assessment is an ongoing requirement to ensure critical processes are able to stay on track.

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Prioritization Schema:

Having limited resources available and then having to prioritize activities are constant issues the University must consider during its daily operations. The current budget reductions have forced the need to make the hard decisions concerning which projects will be undertaken and the order in which they are started. Naturally, the greater the resource requirement to accomplish a project the more intense the evaluation and comparison process must become. Projects which have a broad impact on the university and draw large amounts of resources from many areas within the university will be evaluated and prioritized by senior university executives. Examples of factors which must be considered are: the impact on research activities, the cost of the project and the resources which will be needed, the impact if the project is not completed, other projects are being evaluated, the return on investment of the project, etc.

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Core Business Activities:

Core Business Activity Title	Core Business Activity Description	Core Business Activity Sub-Function Title	Core Business Activity Sub-Function Description
HIGHER EDUCATION	Efforts to coordinate and provide instruction, research and public service through a system of higher education institutions.	Higher Education Instruction	Efforts to provide higher education instruction and related departmental research.
HIGHER EDUCATION	Efforts to coordinate and provide instruction, research and public service through a system of higher education institutions.	Higher Education Research	Efforts to provide for research that is separately budgeted or carried on in institutes or research centers.
HIGHER EDUCATION	Efforts to coordinate and provide instruction, research and public service through a system of higher education institutions.	Higher Education Public Services	Efforts to provide services beneficial to individuals and groups external to the institution.
HIGHER EDUCATION	Efforts to coordinate and provide instruction, research and public service through a system of higher education institutions.	Higher Education Academic Support	Efforts to provide higher education support services that directly support the institution's primary function of instruction, research, and public service.
HIGHER EDUCATION	Efforts to coordinate and provide instruction, research and public service through a system of higher education institutions.	Higher Education Student Services	Efforts to provide support services to students.
HIGHER EDUCATION	Efforts to coordinate and provide instruction, research and public service through a system of higher education institutions.	Higher Education Institutional Support	Efforts to provide operational support for the day-to-day functioning of the higher education institution (excluding physical plant operations).

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HIGHER EDUCATION	Efforts to coordinate and provide instruction, research and public service through a system of higher education institutions.	Operation and Maintenance of Plant	Efforts to operate and maintain physical plant facilities at institutions of higher education (excluding self-supporting enterprises and hospitals).
HIGHER EDUCATION	Efforts to coordinate and provide instruction, research and public service through a system of higher education institutions.	Higher Education Student Financial Assistance	Efforts to provide financial assistance to higher education students.
HIGHER EDUCATION	Efforts to coordinate and provide instruction, research and public service through a system of higher education institutions.	Financial Assistance for Educational and General Services	Efforts to provide resources for educational and general services through supplementing other activities within the system.
HIGHER EDUCATION	Efforts to coordinate and provide instruction, research and public service through a system of higher education institutions.	Unique Military Activities	Efforts to provide resources to support a continuing military environment at institutions of higher education.
MANUFACTURING AND MERCANTILE SERVICES	Efforts to manage and operate production and commodity activities.	Higher Education Auxiliary Enterprises	Efforts to provide essentially self-supporting goods or services to students, faculty, and staff.

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Key Customers Associated With Each Core Business Activity :

Core Business Activity Title	Core Business Activity Description	Core Business Activity Sub-Function Title	Core Business Activity Sub-Function Description
HIGHER EDUCATION	Efforts to coordinate and provide instruction, research and public service through a system of higher education institutions.	Higher Education Instruction	Efforts to provide higher education instruction and related departmental research.
Key Customers Students, parents, taxpayers			
HIGHER EDUCATION	Efforts to coordinate and provide instruction, research and public service through a system of higher education institutions.	Higher Education Research	Efforts to provide for research that is separately budgeted or carried on in institutes or research centers.
Key Customers Business and Industry, VT employees, students, taxpayers Federal Government, Business and Industry, VT employees, students, taxpayers			
HIGHER EDUCATION	Efforts to coordinate and provide instruction, research and public service through a system of higher education institutions.	Higher Education Public Services	Efforts to provide services beneficial to individuals and groups external to the institution.
Key Customers Business and Industry, VT employees, students, taxpayers			
HIGHER EDUCATION	Efforts to coordinate and provide instruction, research and public service through a system of higher education institutions.	Higher Education Academic Support	Efforts to provide higher education support services that directly support the institution's primary function of instruction, research, and public service.
Key Customers Business and Industry, VT employees, students, taxpayers			

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HIGHER EDUCATION	Efforts to coordinate and provide instruction, research and public service through a system of higher education institutions.	Higher Education Student Services	Efforts to provide support services to students.
Key Customers Students, prospective students, parents,			
HIGHER EDUCATION	Efforts to coordinate and provide instruction, research and public service through a system of higher education institutions.	Higher Education Institutional Support	Efforts to provide operational support for the day-to-day functioning of the higher education institution (excluding physical plant operations).
Key Customers Faculty, staff, students Faculty, staff, students,			
HIGHER EDUCATION	Efforts to coordinate and provide instruction, research and public service through a system of higher education institutions.	Operation and Maintenance of Plant	Efforts to operate and maintain physical plant facilities at institutions of higher education (excluding self-supporting enterprises and hospitals).
Key Customers Students, faculty, staff, campus visitors			
HIGHER EDUCATION	Efforts to coordinate and provide instruction, research and public service through a system of higher education institutions.	Higher Education Student Financial Assistance	Efforts to provide financial assistance to higher education students.
Key Customers Students, parents			

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HIGHER EDUCATION	Efforts to coordinate and provide instruction, research and public service through a system of higher education institutions.	Financial Assistance for Educational and General Services	Efforts to provide resources for educational and general services through supplementing other activities within the system.
Key Customers	Sponsoring agencies, scientists and researchers in universities		
HIGHER EDUCATION	Efforts to coordinate and provide instruction, research and public service through a system of higher education institutions.	Unique Military Activities	Efforts to provide resources to support a continuing military environment at institutions of higher education.
Key Customers	Cadets		
MANUFACTURING AND MERCANTILE SERVICES	Efforts to manage and operate production and commodity activities.	Higher Education Auxiliary Enterprises	Efforts to provide essentially self-supporting goods or services to students, faculty, and staff.
Key Customers	Students, faculty, staff, parents		

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Key Activities and Associated Outcomes:

<u>Key Activity</u>	<u>Associated Outcome</u>
Administration and supervision; custodial services; building repairs and maintenance, maintenance of grounds, and utility lines and maintenance repairs; utilities; liability insurance; property rentals; operation of power plant; debt service; and other operation and maintenance services.	The smooth operation of all facility services to support the largest university in the Commonwealth.
Community services; veterinary medical services.	Each program and assistance project in Community Services is individually evaluated towards desired educational outcomes. Overall unit performance is assessed against established desired outcomes.
Eminent scholars; institutional teaching grants; regional grants and contracts; sponsored programs; funds for excellence; outstanding faculty recognition; and graduate and undergraduate assistance.	Sponsored research program contributes directly to the economic development of VA. Faculty, staff, and students at VA Tech submit an average of 70 intellectual property disclosures each year. The research which produced the disclosures was supported primarily by sponsored grants and contracts.
Executive management; fiscal operations; general administrative services; logistical services; and public relations and development.	Ensure the smooth operation of the total University which must be accomplished with limited financial resources.
Food services; residential services; parking and transportation systems and services; telecommunications systems and services; student health services; student unions and recreational facilities; recreational and intramural programs; other enterprise functions; and intercollegiate athletics.	As a rural University's it is necessary that services of the auxiliary enterprises be provided. Services are designed and operated to ensure the cost of obtaining an education remains at a reasonable level. Auxiliary services meet the social, physical, residential and academic needs of students.
Institutes and research centers; individual and project research; agriculture and forestry research; coal and energy research; environmental and water resources research; industrial and economic development research; supporting research; and veterinary medical research.	Research's goal is to increase the economy, efficiency, and safety of various enterprises and activities of interest to VA and US and promote the conservation and economic utilization of natural and human resources through the conduct of research and the dissemination of the consequent findings.

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Libraries; instructional services; ancillary support units; and academic administration.

The University Libraries at Virginia Tech are committed to the concept that ongoing measurement and assessment are significant contributors to building a knowledge base for action in the Libraries. Measurement and assessment are both formal and informal.

Scholarships; grants; work programs; and loan programs.

Need-based aid is critical to ensuring access to higher education and successful completion of a degree program to provide for an educated citizenry.

Student services administration; social and cultural development; counseling and career guidance; student admissions and records; and financial aid administration.

Outcomes of co-curricular programs sponsored by the Division of Student Affairs are assessed, with emphasis on skill-development and academic impact.

Undergraduate instruction; graduate instruction; professional instruction in veterinary medicine; curriculum development; student advisement and assessment; technical support of classroom and laboratory instruction; professional certification; and professional development.

Success is measured in a variety of ways. Repeat programs demonstrating effectiveness with individuals returning for more education. Program evaluations describe strengths, weaknesses, areas for improvement, new courses required, and instruction as well as the learning environment.

Unique Military Activities

The Unique Military Activities appropriation covers costs associated with cadet uniforms and equipment, military administration and training, cadet services, and facilities to support a continuing military environment at institutions of higher education.

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Major IT Projects

Approved for Preliminary Planning — The following project(s) scheduled for initiation in the 2004-2006 Budget Biennium is (are) approved for inclusion in your IT Strategic Plan. A project proposal must be submitted to the CIO before the project(s) will be considered for planning approval. Procurements in support of the project(s) are not approved for submission to the VITA Project Management Division (PMD) for execution until the project has been Approved for Planning by the CIO. For detailed instructions refer to the Interim Procedures for the Initiation and Approval of Major and Non-major Information Technology Projects.

<http://www.vita.virginia.gov/projects/cpm/cpmDocs/projectInitInterimProcs030903.doc>

There are no major projects approved for preliminary planning.

Approved for Planning — The following project(s) scheduled for initiation in the 2004-2006 Budget Biennium is (are) approved for planning. This approval constitutes authorization to undertake the planning necessary to complete a detailed project proposal and project charter for consideration by the Secretariat Oversight Committee and the CIO. Projects "Approved for Planning" must be formally approved for development by the Commonwealth IT Investment Board prior to beginning Phase 3 of the project lifecycle (Project Planning) and execution as defined in the Commonwealth Project Management Guideline. Procurements in support of developing the detailed project proposal and charter are approved for submission to the VITA Project Management Division (PMD) for execution, in accordance with PMD procedures. For detailed instructions refer to the Interim Procedures for the Initiation and Approval of Major and Non-major Information Technology Projects.

<http://www.vita.virginia.gov/projects/cpm/cpmDocs/projectInitInterimProcs030903.doc>

There are no major projects approved for planning.

Active Projects — The following project(s) are(is) scheduled to continue in the 2004-2006 Budget Biennium as an Active Project. All Active Projects must be tracked on the Commonwealth Information Technology Major Projects Dashboard and are subject to monthly review by the CIO. The CIO is authorized to assess progress of all Active Projects and recommend termination of a project to the Commonwealth IT Investment Board.

There are no major projects in the active projects category.

Collaboration Opportunity — The following project(s) is (are) designated as a Collaboration Opportunity. Your agency should consult with the other agencies listed on the corresponding collaboration report and evaluate whether collaboration between agencies on these projects is feasible. The results of your collaboration efforts and evaluation should be reported when the project is presented to the Commonwealth IT Investment Board for "Development Approval".

There are no collaboration opportunity projects.

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Major IT Procurements

Approved Major IT Procurements - The following major procurements are approved for submission to the VITA Project Management Division (PMD) for execution in accordance with PMD procedures.

There are no approved major procurements.

Disapproved Major IT Procurements - The following major procurements are not approved for submission to the VITA Project Management Division (PMD). The agency should not take any action on the major procurements listed below.

There are no disapproved major procurements.

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Non-major IT Projects

Approved for Planning— The following project(s) scheduled for initiation in the 2004-2006 Budget Biennium is (are) approved for planning. This approval constitutes authorization to undertake the planning necessary to complete a detailed project proposal and project charter for consideration by the CIO. Projects "Approved for Planning" must be formally approved for development by the CIO prior to beginning Phase 3 of the project lifecycle (Project Planning) and execution as defined in the Commonwealth Project Management Guideline. Procurements in support of developing the detailed project proposal and charter are approved for submission to the VITA Project Management Division (PMD) for execution, in accordance with PMD procedures. For detailed instructions refer to the Interim Procedures for the Initiation and Approval of Major and Non-major Information Technology Projects.

<http://www.vita.virginia.gov/projects/cpm/cpmDocs/projectInitInterimProcs030903.doc>

There are no non-major projects approved for planning.

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Non-major IT Procurements

Approved Non-major IT Procurements - The following non-major procurements are approved for submission to the VITA Project Management Division (PMD) for execution in accordance with PMD procedures.

There are no approved non-major procurements.

Disapproved Non-major IT Procurements - The following non-major procurements are not approved for submission to the VITA Project Management Division (PMD). The agency should not take any action on the major procurements listed below.

There are no disapproved non-major procurements.